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REMARKS

Reconsideration and further examination is respectfully requested. Claims 1-46 are currently pending in this application. Applicant notes that claim 1 has been amended to incorporate a limitation that was previously included in Claim 14. Independent claims 15, 23, 31 and 39 have also been amended to include the limitation of claim 14. As this limitation has already been considered by the Examiner, Applicant respectfully submits that the amendments to the claims do not necessitate a new search, but rather places claims into an allowable state for reasons stated below.

Applicant note that the amendments to the claims are made to forward the application towards allowance, and in no manner reflect any agreement with the Examiner with regard to Bhagwat. Due to Applicants' interest in moving the application towards allowance, Applicant's attorney respectfully requests an interview with the Examiner once the Examiner has had the opportunity to review the above amendments and below remarks.

Objections to the specification:

The disclosure was objected to for failure to include a patent number on page 1, line 10. Applicants have amended the specification to update this reference and it is therefore requested that this objection be withdrawn.

Rejections under 35 U.S.C §102

Claims 1-6, 10-19, 23-27, 31-35, and 39-43 were rejected under 35 U.S.C. §102(e) as being anticipated by Bhagwat et al. (U.S. 6,651,105).

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<u>Bhagwat:</u>

Bhagwat describes a method, apparatus and/or protocol for emulating a direct serial line over a multi-hop packet data network. (col. 3, lines 31-33). Bhagwat introduces a Mobile Serial Cable Protocol which "enables the serial communication applications to run seamlessly while the underlying physical serial link that connects a mobile device to an access point changes..." In particular, Bhagwat describes, at column 4, lines 37-61:

> "... PPP is the most commonly used protocol for connecting mobile devices to the Internet via access points. Since the state associated with the PPP connection is shared between the mobile device and the access point, a new PPP connection establishment is required whenever a mobile host moves to a new access point. Since this process is time consuming and wasteful, the present invention provides a method for preserving an already established PPP connection during hand-offs. The method is implemented by extending the PPP connection beyond the access point; by placing the network side PPP peer in a backend server instead of the access point; and by tunneling the PPP traffic between the access point and the backend server. In this arrangement, the backend server is a gateway to the Internet and the access points are layer-two bridges that forward PPP payloads back and forth between mobile devices and the backend server... The present invention provides a virtual PPP link which remains fixed to the higher layers even though one end of it moves and the underlying physical access link changes..."

At column 6, lines 27-32, Bhagwat states that the basic entities of the Mobile Serial Cable Protocol are mobile computer devices, access points and back-end servers.

With regard to the access points, Bhagwat describes, at column 6 lines 62-column 7, line 13:

> "... An access point 420 is the termination point of a physical access link that connects a mobile device to a network infrastructure. An access point includes the following main components: 1) A Medium Access Control and Mobility Support Layer (MMS) 440. This layer is responsible for controlling the access to the medium and registration of new mobile devices that come into the range of the access point... 2) A Tunneling Agent 430 that tunnels the traffic of a mobile device to a backend server. A tunneling agent sits above the MAC layer. A tunneling agent in an access point corresponds with a tunneling agent in a backend server and is responsible for establishing, maintaining, and releasing tunnel sessions that will carry the traffic of a mobile device between an access point and the backend server...."

Bhagwat further describes, at columns 7-8, a PPP connection establishment:

"...   When a mobile device 550 initiates PPP connection establishment, a PPP Connection Request Packet (LCP Conf-Req) is generated by the PPP client on the mobile device and sent out through the serial port. The MMS module 545 receives the packet and starts the establishment of a virtual link towards the PPP backend server 595. Further communication between PPP peers will be through the virtual link once it has been established.... After receiving the initial PPP LCP Connection-Request packet, the MMS module 540 sends a Greet message 502 to the access point 520. The Greet message 502 indicates to the access point 520 that the mobile device 550 wants to establish a PPP connection, and therefore wants a tunnel session to be established to the backend server 595 to carry the PPP traffic. Upon receipt of the Greet message 502, the access point starts the tunnel establishment procedure. ..."

Thus Bhagwat separates protocol processing so that a portion of the protocol processing is performed at the AP and a more complex portion of the protocol processing is performed at a back end device to minimize the amount of functionality that needs to be provided in an access point. As recited in Applicant's instant specification, at page 7, lines 6-10 "... The AP devices are therefore "thin" AP (TAP) devices that support and implement only a small subset of the wireless communication protocol stack and therefore require minimal processing and memory resources..." Such an advantage is not provided by the architecture described in Bhagwat.

Claim 1:

For example, in contrast to Bhagwat, Applicant's claim 1 recites "... A wireless communication system ... wherein the access point device and the back end device work in conjunction to implement a plurality of protocol layers of a wireless communication protocol for enabling communication between the terminal equipment device and the host device , ... wherein the access point device is operably coupled to receive a wireless protocol message from a terminal

equipment using the lower protocol layer and forward upper protocol layer information from the wireless protocol message to the back end device over a pre-established communication connection, and wherein the pre-established communication connection is a PPP-over-Ethernet connection..." In contrast to the claimed use of PPP-over Ethernet for establishing the connection between the back-end device and the access point, Bhagwat describes the use of tunneling for forwarding communications between the access point and the back-end device.

Applicant notes that claim 1 has been amended to incorporate the limitation of claim 14, which was previously rejected by the Examiner for reasons stated on page 17 of the office action as :

".. Regarding claims 14 and 17 and 19 and 25 and 27 and 33 and 35 and 41 and 43- Bhagwat discloses the local area network is an Ethernet local area network, and wherein the pre-established connection is a PPP-over Ethernet connection..." Applicant disagrees, as Bhagwat explicitly states that PPP messages are forwarded through dedicated tunnels to the back-end server. Although the Examiner refers to application 09/439,951 of Bhagwat, Applicant notes that the portions of the cited reference deal with a direct connection between an access point and an application host, *not* a back-end server architecture as described in Bhagwat. Accordingly, for at least the reason that Bhagwat fails to disclose or suggest every limitation in the claims, the rejection under 35 U.S.C. §102 is overcome and should be withdrawn.

Independent claims 15, 23, 31 and 39 have been amended to include the limitation of 'a pre-established PPP over Ethernet connection', as previously recited in claim 14. Accordingly, for at least the reason that Bhagwat fails to teach a coupling between the AP and the back-end server which uses a pre-established PPP over Ethernet connection, Applicant's claims 15, 23, 31 and 39 are patentably distinct over the references, and the rejection should be withdrawn.

Dependent claims 2-14, 16-22, 24-30, 32-38 and 40-46 serve to add further patentable limitations

to their respective parent independent claims 1, 15, 23, 31 and 39, and are thus allowable for at

least the same reasons as the parent claims. Accordingly, it is respectfully requested that the

rejections be withdrawn.

Rejections under 35 U.S.C. §103(a)

Claims 7-9, 20-22, 28-30, 36-38 and 44-46 were rejected under 35 U.S.C. §103(a) as

being unpatentable over Bhagwat in view of Olgaard et al (U.S. 6,542,740), hereinafter Olgaard.

Olgaard:

Olgaard describes:

"...To solve the problem of having a small cell phone be able to create a sufficient
graphical interface to enable a web surfing experience, a system is disclosed that enables interface
roaming. Users utilize interface devices ("interface clients") external to the actual communication
engine. This enables use of a small communication device (such as a mobile phone or a wireless
personal digital assistant ("PDA")) while maintaining the ability to present a graphical interface on
a display separate from the device. The interface client may be any display which is close or
proximate to the user and the user's communication device. The system will select the best-suited
display available to the user..." (Col. 3, lines 14-20)

The Examiner states, at page 9 of the Office Action:

"... Bhagwat discloses a wireless communication protocol for enabling communication

between a terminal equipment and a host device. Bhagwat does not expressly disclose a

Bluetooth wireless communication protocol and providing additional state-based services.

Olgaard discloses utilizing a Bluetooth wireless communication protocol and providing additional

state-based services, refer to column 8 lines 21 to 36 and column 10 lines 20 to 38. At the time of

the invention it would have been obvious to a person of ordinary skill in the art to combine

Bhagwat with Olgaard to provide Bluetooth as the wireless communication protocol. The

suggestion/motivation for doing so would have been that providing a standard protocol will allow

for greater compatibility between customer equipment while maintaining the latest interfaces in

keeping up with the market place to provide the latest state-based services..."

Applicants respectfully disagree for the following reasons.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First,

there must be some suggestion or motivation, either in the references themselves or in the

knowledge generally available to one of ordinary skill in the art, to modify the reference or to

combine reference teachings. Second, there must be a reasonable expectation of success. Finally,

the prior art reference (or references when combined) must teach or suggest all the claim

limitations. Applicants respectfully submit that the combination of Bhagwat with Olgaard fails to

satisfy these criteria with regards to claims 7,-9, 20-22, 28-30, 36-38 and 44-46 for the following

reasons.

1. No motivation for the modification suggested by the Examiner

It is well known that the mere fact that references can be combined or modified does not

render the resultant combination obvious unless the prior art also suggests the desirability of

the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The Examiner alleges that one would be motivated to modify the teachings of Bhagwat to

use a Bluetooth protocol, rather than either the disclosed Mobile Serial Cable protocol or

Mobile PPP protocol, because "...allow for greater compatibility between customer equipment

while maintaining the latest interfaces in keeping up with the market place..." However,

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Applicants disagree that such a motivation can be found in the combination of references, since the entire Bhagwat reference deals with the introduction of the two protocols and their associated benefits.

In addition, Applicant notes that both references seek to solve two different problems; Bhagwat seeks to maintain PPP connections during re-associations with APs, while Olgaard seeks to roam among different interface clients. Although both references deal with wireless networks, each is concerned with opposite aspects of wireless networks (i.e., maintaining connections in Bhagwat versus changing connections in Olgaard), and thus Applicants submit that neither reference would be motivated by the teachings of the other.

Accordingly, for at least the reason that no motivation can be found for the modification of the references as suggested by the Examiner, the rejection is improper and should be withdrawn.

2. Combination neither describes nor suggests the claimed invention

As described above, Bhagwat discloses a Mobile serial cable protocol which essentially moves a PPP peer relationship from an access point to a back-end device by forwarding PPP protocol requests, via a tunnel, to the back-end device. Olgaard describes a system for swapping client interfaces. No mention can be found in the references, alone or in combination of the limitation which is present in all of the independent claims of "... a pre-established PPP over Ethernet connection" between an AP and a back-end device. Accordingly the combination of references fails to describe or suggest every limitation in the parent independent claims. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Accordingly, for at least these

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reasons, the rejection of claims 7-9, 20-22, 28-30, 36-38 and 44-46 under 35 U.S.C. §103 cannot

stand, and it is respectfully requested that it be withdrawn.

Applicants have made a diligent effort to place the claims in condition for allowance.

However, should there remain unresolved issues that require adverse action, it is respectfully

requested that the Examiner telephone Lindsay G. McGuinness, Applicants' Attorney at 978-264-

6664 so that such issues may be resolved as expeditiously as possible.

For these reasons, and in view of the above amendments, this application is now

considered to be in condition for allowance and such action is earnestly solicited.

Respectfully Submitted,

6/1/2005
Date

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Docket No. 120-169
Dd: 06/01/2005